

# 2021 Dairy Promotion Order Annual Report

## Overview

The Division of Milk Control and Dairy Services is responsible for the administration of the New York State Dairy Promotion Order (NYSDPO). The NYSDPO was proposed and approved by a referendum vote by New York dairy producers to promote the consumption of New York milk and dairy products. Dairy producers have an obligation to the National Dairy Research and Promotion Program of 15 cents per hundredweight of all milk produced. NYSDPO collects an assessment at the rate of 10 cents per hundredweight. This decreases New York dairy producers' obligation to the national program and allows the 10 cents to remain in New York. An Advisory Board (Dairy Promotion Advisory Board) comprised of New York State dairy producers provides advice and recommendations to the State Commissioner of Agriculture and Markets on how these funds should be spent, in line with the following goals:

1. Increase the consumption of New York milk and dairy products by youth (lunches, breakfasts, and other offerings)
2. Increase retail sales of New York milk and dairy products
3. Improve the image of dairy products and/or dairy producers among consumers, thus improving the acceptance and consumption of New York milk and dairy products
4. Improve communication to dairy producers to inform them of how they can assist in improving the consumption of New York milk and dairy products
5. Increase the sales and consumption of milk and dairy products produced in the US and exported to other countries
6. Participate in national programs that influence an increase in consumption of milk and dairy products
7. Conduct research projects to ensure the safety and/or expand the demand for New York dairy products and dairy ingredients

According to the U.S. Department of Agriculture (USDA), United States per capita consumption of dairy products is increasing. However, the per capita consumption of fluid milk products continues to decline.

### US Per Capita Consumption of Fluid Milk and Dairy Products (pounds)

	2017	2018	2019	2020	2021	% Change 2017-2021

Fluid Milk Consumption <sup>3</sup>	149	145	141	141	134	-10.1%
Dairy Product Consumption (Including Fluid) <sup>3</sup>	643	644	652	655	667	+3.7%

New York regulations (1 NYCRR Part 40; Section 35) require that an annual report be prepared each year for the benefit of the producers. Specifically, this report “shall contain information on the promotion programs carried on during the preceding year, expenditure of funds for each program and such other information as may be of benefit to producers.”

The NYSDPO budget for the 2021 contract year had available funds for promotion and research activities of \$15,150,000. During 2021, the NYSDPO contracted with eight organizations for projects that totaled \$15,143,285.

Award recipients were asked to submit a summary of their work for the 2021 contract year. The submissions are included below and solely represent the language and opinions of the award recipients and their supporting organizations.

## Promotional Contracts, Summaries and Metrics, 2021 Calendar Year

### American Dairy Association and Dairy Council (ADADC)

[www.AmericanDairy.com](http://www.AmericanDairy.com)

Contract Awarded: \$10,500,000

Summary of Company: ADADC is a farmer-directed and funded non-profit organization that works to enhance consumers’ understanding of and appreciation for dairy farmers and dairy products by engaging local farmers, cultivating a dialogue with consumers, and advancing the dairy industry at the state and national level. ADADC builds sales and consumer trust by creating demand for dairy products through retail, e-commerce, schools, digital/social, and traditional media and enlisting the help of local dairy advocates to “tell dairy’s story.”

#### ***Priority Areas Addressed:***

#### **Goal #1 - Increase the consumption of New York milk and dairy products by youth (lunches, breakfasts, and other offerings)**

Budget: \$3,156,386

The project focused on increasing the consumption of milk and dairy products by youth. We achieved this objective by leveraging opportunities in two key marketing areas: 1) growth of dairy sales; and 2) expansion of trust, in relation to school lunches, breakfasts, and other meal offerings. Tactics included:

- School Breakfast and Lunch program supports 38 large school districts, representing 3,426 schools and 1,672,371 students across the ADADC region. We added 131,400 additional students for the breakfast and 192,268 for the lunch program.
- Just Say Cheese! initiative achieved a 45% aggregate increase in cheese sales across 15 school districts, with an overall enrollment of 99,866 students.
- Educating Youth about Dairy program reached 28,260 teachers and 872,940 students from 2nd to 4th grade; 27,282 teachers and 1,364,100 students in middle school; and 15,223 teachers and 761,150 students in high school.
- Dairy Farmer Image Campaign - Fun on the Farm/This American Dairy Farmer- 12 episodes were recorded, which reached 2,285,771 views.
- Fuel Up to Play 60 (FUTP 60) student-led health and fitness initiative saw 5,459 schools enrolled, with a total enrollment of 3,000,000 students.
- “Refuel with Chocolate Milk” Sports Marketing Campaign reached 7,000 coaches (87,500 students) monthly with nutritional information and participated in 2,350 sectional and in-person championship events.

***Priority Areas Addressed:***

**Goal #2 - Promote uniqueness of, and increase sales of, New York milk and dairy products and/or ingredients throughout the entire food supply chain through various distribution channels, including, but not limited to, e-commerce, curbside sales, etc.**

Budget: \$2,127,890

ADADC’s retail team has designed, initiated, and now directs programs that cover e-commerce, large and small retailers, food banks and charitable efforts funded through government grants. ADADC staff worked with dairy managers, category directors, vice presidents of marketing, directors of merchandising, and retail dietitians to grow dairy category sales.

Tactics consisted of:

- E-commerce program for milk and cheese that achieved 15,476,404 impressions and additionally attributed milk sales of \$1,985,618
- The Dairy Aisle Performance Program (DAPP) is a retail audit and awareness system that addresses execution at the store level. The team assessed 1,028 stores with 4,157 retail visits
- Dairy Aisle Reinvention (DAR) is a unique in-store program that creates the best in store dairy shopping experience for retail customers to increase dairy sales and consumption. The program utilizes multiple merchandising elements to modernize the look of the aisle and inspire consumers to purchase additional dairy items. We implemented new signage in 90 stores, initiated the new installation of 42 stores with yogurt dividers and 31 stores with cheese pushers.

- Local Farmer Image Signage program incorporated local farmer images and their stories in customized, retailer-specific sign packages, digital, social, and print media; 82 new stores were implemented.

**Priority Areas Addressed:**

**Goal #3 - Improve the image of dairy products and/or dairy producers among consumers, thus improving the acceptance and consumption of New York milk and dairy products.**

Budget: \$1,831,896

This dairy producer-image project built consumer trust by providing a platform for dairy producers to “tell their stories in an authentic, compelling way” so consumers understand the conscious and meticulous effort dairy producers undertake to generate dairy products in the most caring and sustainable way.

Tactics consisted of:

- Traditional media and dynamic marketing campaigns. National Nutrition Month, National Ag Week, Virtual Farm Tours, National Dairy Month/World Milk Day, Summer Meals, Fill a Glass with Hope, Government-funded Milk Giveaway Events, and This American Dairy Farmer. In 2021, 2,780 stories were placed in the news that reached 21,621,495 people across traditional media (TV, radio, print) plus 245,151,514 online potential reach (online/digital news websites) for a total of 266,773,009 media impressions.

The following were some of the additional programs:

- “#Make Milk Moments Campaign” 2021 won national recognition and the PR Daily Nonprofit Communication Award. We garnered 1.6 million media impressions.
- “Whole Latte Love” was a whole milk promotion campaign for National Coffee Day. We placed five stories on local news stations, received 40,720 television news on-air media impressions and 1.022 million news online impressions for a total of \$23,513 estimated publicity value.
- “Keeping Cows Cool” – How Dairy Farmers Care for their Cows generated 112 news placements, 450,000 television and print newspaper impressions, and 5.5 million online impressions.

Website, Digital and Social Media - AmericanDairy.com & SavorRecipes.com:

- AmericanDairy.com and SavorRecipes.com content was distributed through social media, digital advertisements, and third-party influencers. We generated 1,252,204 sessions on our website; 81,166,300 social media impressions; and 4,204,125 social media engagements.

Issues Management and Crisis Readiness and Response:

- ADADC’s Issues Management and Crisis Response Team tracked and handled 83 issues; held one organization-wide training event; and shared weekly communications with key Dairy Management Inc. staff regarding ongoing issues.

**Priority Areas Addressed:**

**Goal #4 - Improve communication to dairy producers so they can assist in the effort to improve the consumption of New York milk and dairy products by highlighting the sustainability story.**

Budget: \$696,328

ADADC’s industry relations team conducted training and provided tools and support for dairy farmers, dairy princesses, and other dairy advocates to tell the dairy story and worked to strengthen the image of dairy farmers with consumers through a farmer presence at events and with the media. Tactics consisted of:

- Spokesperson Training, Advocacy Support and Farmer Engagement with 27 spokespersons trained
- DairyFAN (Dairy Food Advocacy Network) to champion dairy with consumers through social media reached 1.43 million impressions
- Farm Tours and Key Leader Farm Tours for key influencers, including health professionals, community leaders, environmental organizations, and others; 63 farm tours were hosted.
- Dairy Princess Program provided training, support, and resources to the network of county dairy princesses, dairy maids, and dairy ambassadors. In 2021, the dairy princesses collectively reported that they reached 25,810 students through school activities.
- Produced newsletters for dairy farmers that provided talking points for consumer communications and provided examples of dairy farmers engaged in dairy promotion activities. We completed three direct mail pieces, 69 placements in dairy trade publications, and 101 digital news updates.
- We hosted face-to-face and virtual meetings, reaching 121 key dairy farmer leaders; 158 dairy farmers held meaningful roles at program events.

**ADADC’s Participation in National Program – Dairy Management Inc.**

Budget: \$2,687,500

Please see Dairy Management Inc.’s section for a summary and breakdown of its initiatives and metrics.

**New England Dairy Promotion Board (NEDPB)**

<https://www.mustbethemilk.com/>

Contract Awarded: \$1,650,000

Summary of Company: Since 1920, New England Dairy Promotion Board, a dairy checkoff organization, has represented New York and New England dairy farmer interests in schools and with thought leaders, the dairy supply chain, consumers, and media to promote dairy's science-based health benefits and sustainable farming practices. We are staffed by registered dietitians and marketing communications professionals. Our focus is building trust and sales for dairy in five New England states, a key market for New York dairy. Our programs are informed by current consumer insights and dairy farmer perspectives. By leveraging national and local partners, we maximize program impact and dairy farmer investment.

### ***Priority Areas Addressed:***

**Goal #1 - Increase the consumption of New York milk and dairy products by youth (lunches, breakfasts, and other offerings)**

**Goal #2 - Promote uniqueness of, and increase sales of, New York milk and dairy products and / or ingredients throughout the entire food supply chain through various distribution channels including but not limited to, e-commerce, curbside sales, etc.**

Budget: \$389,975

Program 1: Equipment and marketing grants

In 2021, we provided almost \$135,000 in equipment and marketing grants to 65 New England schools to make changes to their meal offerings and boost participation. Schools chose a variety of programs including breakfast, smoothies, hot chocolate milk, bulk milk, and summer meals. Smoothies were the most popular program, accounting for nearly 65 percent of the approved applications.

- Grant rounds occurred in January, April, and October. Very preliminary data, with only 13 percent of schools submitting their post-implementation data at this point, shows a 55 percent increase in dairy sales and an 89 percent increase in meal distribution. Please note, this is a much larger increase than expected due to the overall lower rates of baseline meal distributions as a result of school closures.

Program 2: Building connections with strategic partners and school stakeholders

We hosted our “Chill Out with Cold Milk” webinar for school nutrition professionals on May 11. This webinar discussed the health benefits of milk, the importance of maintaining proper temperature, and tips for keeping milk cold. Sixty-eight school nutrition professionals attended. Attendees’ positive perception of dairy increased from 88 to 100 percent.

- Webinar registrants received a “Chill Out with Cold Milk” toolkit, including a milk temperature survey and food thermometer. Fifty-two school nutrition professionals

submitted the milk temperature survey, which required them to test milk temperatures at several points during meal service and adjust as needed.

- The recorded webinar is available for viewing on our website.

On May 20, we hosted our School Nutrition Experts Forum to facilitate conversations with school districts and stakeholders around dairy sales in schools and to identify ways to encourage students to consume more dairy.

- There were 21 attendees representing diverse districts, as well as other school stakeholders, such as USDA Food and Nutrition Services Northeast Regional Office, State Departments of Education, and Farm to School partners.
- The group discussed challenges and ideas for how to increase dairy consumption, which will help guide future programming.

### Program 3: Dairy Promotion Toolkit

#### Best Practice Resource:

- To educate our food insecurity partners on dairy farmers' efforts to nourish their communities and help their neighbors, we created a best practice resource and developed a Feeding Our Communities webpage.

#### Creative Solutions for Family Meal Preparation:

- In July, we completed a comprehensive set of resources in both English and Spanish to encourage the increased use of dairy in the home. These "Quick & Easy" resources were designed for use with our food insecurity partners and the millennial mom. These resources illustrate the versatility and value of dairy as a pantry staple, the "go-to" ingredient that makes whatever is in your fridge a delicious, quick, and easy dinner.

#### Our Quick & Easy Resources include:

- Four recipe guides to make quesadillas, pizza, macaroni and cheese, and grilled cheese with suggested add-in ingredients to make complete meals.
- Seven "how to" videos to accompany the recipe guides to help visual learners prepare meals using dairy.
- A two-page shopping and home pantry stocking guide that also directs readers back to our recipe guides and videos.

These resources were shared with our eight major food banks, 5,300 registered dietitians, and other food system partners.

### Program 4: Dairy Supply Chain Marketing Support

New England Dairy (NED) has conducted consumer and audience research since 2017. The latest round of research, conducted in 2020, tracked the change in perception about dairy among consumers and explored insights on youth, pediatricians, and school

nutrition directors. Through webinars offered to the dairy industry, we provided attendees with an exclusive dive into the research findings about the millennial mom consumer and youth (Gen Z). Our webinars were targeted at farmers, brands, processors, co-ops, and other dairy industry stakeholders who play a part in the production, processing, marketing, and sales of dairy in New England.

We teamed up with Chase Winovich, New England Patriots' linebacker, and The Patriots Radio Network to locally execute the Home Fridge Advantage (HFA), a national checkoff program, throughout the Patriots season. New England dairy farmers donated at least 100 gallons of milk to families to coincide with each Patriots home game. Chase was featured in radio ad reads promoting HFA activation and leading people back to our website. NED held donation events in Connecticut, Massachusetts, New Hampshire, Rhode Island, and Vermont, providing over 800 gallons of milk to families in need, courtesy of our local processors. New York Milk flows into New England. This campaign highlighted dairy farmers giving back to their communities, helping to increase trust in dairy. When trust and milk sales increase in New England, this benefits New York farmers.

### ***Priority Areas Addressed:***

**Goal #3 - Improve the image of dairy products and/or dairy producers among consumers, thus improving the acceptance and consumption of New York milk and dairy products.**

**Goal #4 - Improve communication to dairy producers to inform them how they can assist in improving the consumption of New York milk and dairy products by highlighting the sustainability story.**

Budget: \$821,060

Program 1: Comprehensive influencer strategy (to reach: youth, consumers, thought leaders)

- TJ Show - Until Further Notice Podcast Sponsorship: In June and July, we partnered with podcaster TJ Taormina to share how dairy brings fun to his family and sharing dairy's story to his followers in Massachusetts, Connecticut, Rhode Island, New York, and beyond. The campaign garnered 71,000 impressions.
- Olympics: We leveraged our partnership with local Team Milk athlete Gevvie Stone leading up to the Olympics. Our team worked to pitch Gevvie's Olympic story and dairy connection to local outlets. Also, we used our social channels to amplify Elle Purrier St. Pierre's Olympic journey.
- During National Dairy Month in June, we celebrated the joy of real dairy through social media by introducing the next generation of farmers to Gen Z and Millennials. We worked with DMI and four dairy farmers across New England to create a video that showcased unique hobbies and passions dairy farmers have in addition to farming.

- Our digital influencer approach is to work with engaging, lifestyle-oriented influencers who can tell the dairy story—health, planet, and community—in a way that is authentic to themselves. Total social media impressions and engagement were up 8.2 percent compared to 2020.

Program 2: Virtual Culinary and Wellness Event Series (to reach: youth, consumers, thought leaders)

- We sponsored a virtual cooking series with Amy Labelle and New Hampshire (NH) PBS. A live demo virtual event on February 9 featured a pizza recipe demonstration. There were consistently between 75 to 88 viewers for the whole event, surpassing NH PBS's goal of 50 attendees. Four pre-recorded recipe demos are still available on the NH PBS webpage.
- This June we hosted a virtual New England Dairy Game Day event for 50 students and educators. This two-hour event was divided into four quarters, like a football game, with each including educational activities about dairy nutrition and dairy farming. Special guests included five dairy farmers and a New England Patriots cheerleader and mascot. After the event, 95 percent of survey respondents felt positive about dairy.
- On November 18, we hosted a virtual event featuring New England Patriots Player Chase Winovich and Massachusetts dairy farmer Nicole Fletcher to whom students could ask questions. Over 100 schools participated in the live event, reaching nearly 2,100 students and educators. Post-survey results revealed that 100 percent of educators and administrators and 8 percent of the students felt positive about dairy following the event.
- Similar to above, milk from New York farmers is purchased by New England customers. Trust in dairy and dairy farmers leads to sales. These activities targeted Gen Z and Millennial Mom audiences to increase positive perception of dairy, leading to trust. When trust and sales increase in New England, this benefits New York farmers.

Program 3: Educational outreach to health professionals and pre-professionals (to reach: thought leaders)

- On March 26, well-known sports dietitian, Nancy Clark, spoke at a virtual Massachusetts Academy of Nutrition at Dietetics meeting to 72 attendees.
- We hosted five webinars:
  - Make Every Bite Count: Digesting the New Birth-24 Month Dietary Guidelines with Erin E. Quann PhD., RD to 132 attendees.
  - Individualizing Diabetes Care in the Latinx Community with Joslin Diabetes Center's Joanna Mitri, MD, MS and Nicole Patience, MS, RD to 78 attendees.
  - From Cow to Cheese: Live Virtual Farm and Cheese Production Tour with Jasper Hill Farm to 131 attendees.
  - Dairy Fat: From a Single Nutrient to the Food Matrix with University of Vermont's Jana Kraft, Ph.D. and Allison Unger, Ph.D. to 85 attendees.

- The Ties that Bind, Microbiome, Immunity and Child Development with Dr. Robert Murray, MD to 84 attendees.
- Reached 8,300 pediatricians through a postcard mailing and digital communications promoting the recording.
- Reached 5,300 registered dietitians with a mailing offering resources to promote dairy's science-based health benefits.
- Hosted seven educational events reaching 138 dietetic interns and students.
- Expanded our quarterly science newsletter to eight editions to share current dairy research.
- Hosted Nourishing New England: A Forum for Nutrition Security with 26 food insecurity partners.

Program 4: Community Events featuring our Mobile Dairy Bar (to reach: consumers, youth)

The Mobile Dairy Bar, our refrigerated milk tap truck and mobile experience, traveled to 22 events this year reaching more than 23,000 people. At these events, the Mobile Dairy Bar:

- Distributed thousands of milk samples and single serve cheese samples.
- Connected people to social media to extend the reach of messaging and activation.
- Used our photo booth for fun social content sharing and consumer contact capture.
- Directed consumers to a dedicated section on our website for more information and interaction.
- Some examples of events are:
  - On December 10, St. Albans hosted their annual holiday tractor parade with the Elle Purrier St. Pierre as the grand marshal.
  - On July 17, Sprague Ranch in East Randolph, VT hosted Art on the Farm, an event that celebrates the dairy community and connects the public with dairy and art.
  - Others included drive-in movies, farmers' markets, road races, and the Boston Common Frog Pond opening.

Program 5: Media Relations (to reach: consumers, dairy farmers)

New England Dairy has placed 62 earned media hits with news outlets (traditional and digital) throughout the region. Those hits represent an audience reach of 1,873,000 (eyes and ears seeing and hearing our content), and a coverage value of over \$50,000 (the amount of money that represents the news placements and broadcast space we earned "for free"). We utilize our earned media efforts to highlight dairy farming and dairy nutrition. We've placed stories on everything from dairy farm sustainability awards, to highlights of dairy farmer grants to schools, to our Olympic athlete partners competing on the biggest stage.

## Program 6: Short Form Video Series

As consumers question the sustainability of dairy farming, we have developed a series of three videos about on-farm sustainability practices. Our first two videos feature Fairholm Farm and Valleyside Farm, both in Connecticut. These videos specifically feature information on soil health, cropping practices, the ways in which the two farms support each other, and showcase why farmers are leading the way in terms of environmental stewardship. Both videos have been shared on social media, and resources will be developed to leverage their use in schools. The third video was shot in November. This video focuses on dairy farmers' year-round commitment and work to improve soil health. This video will be shared out in 2022 through social media, in resources, and to schools. These videos were made possible in part by an AgEnhancement Grant we received from Farm Credit East.

## Program 7: Farm to School and Home (to reach: youth, consumers, thought leaders)

- Mid-Year Outreach: In March, we sent a mailing to 3,600 Fuel Up to Play 60 schools containing dairy farm-to-school promotion and education materials. Highlights of these materials included posters, recipe cards, and an activity book.
- Adopt a Cow: On July 1, we entered a partnership with Discover Dairy. This partnership allows us to localize the Adopt a Cow program, a year-long virtual experience for students to care for a calf and interact with a local dairy farmer. Educators receive regular updates from the farmer. There are currently over 1,250 New England schools enrolled in the program, reaching more than 36,000 students.
- Back to School Outreach: In October, we sent a mailing to 4,100 educators featuring New England Dairy's Go-to-Guide for the Classroom and Beyond. This Go-to-Guide is a tool for educators to use all year long that will allow them to have all dairy resources at their fingertips. Educators also received a lenticular poster (picture changes as the image is viewed from different angles) featuring Fuel Up to Play 60 Patriots Player Ambassador Chase Winovich with a milk mustache to promote milk and the new FUTP 60 Student Zone app.

## Program 8: Cultivate farmers to serve as spokes-farmers for the industry

- Farmer grant program: \$18,113 has been distributed to dairy farmers across New England for dairy promotion projects. Projects included:
  - An educational video
  - On-farm youth camp and farm tour
  - An open farm day
  - A dairy educational center
- Youth Dairy Industry Trainings were held on:
  - July 12, New England Holstein Summer Show
  - July 21, UVM CREAM: Cooperative for Real Education in Agricultural Management (CREAM), University of Vermont

- July 27, 4H'ers at the Big E
- U.S. Dairy Sustainability Award: We partnered with DMI and Vanguard Renewables to highlight Goodrich Farm in Salisbury, VT as a recipient of a 2021 U.S. Dairy Sustainability Award.
- Farmer Communications: We continue to communicate with farmers.
  - E-newsletter: open rate of 41.5% reaching 1,747 individual viewers
  - Co-ops: Bi-monthly content to DFA and Agri-Mark members
  - Trade publications: 13,500 impressions from Hoard's Dairyman, Lancaster Farming, and Progressive Dairy

**Priority Areas Addressed:**

**Goal #5 - Participate in national programs influencing increased consumption of milk and dairy products.**

Budget: \$438,965

Please see Dairy Management's section for a summary and breakdown of its initiatives and metrics.

**Dairy Management Inc. (DMI)**

[www.usdairy.com/about-us/dmi](http://www.usdairy.com/about-us/dmi)

Budget: \$3,126,465 (ADADC- \$2,687,500 & NEDPB- \$438,965)

The NYSDPO did not directly award DMI a contract for the 2021 year. However, given the amount of funds contributed to the national program, a summary of DMI's work has been submitted by ADADC and NEDPB.

Summary of Company: Dairy Management Inc. (DMI), which represents and implements the national dairy checkoff program, works on behalf of America's dairy farmers, including the nearly 4,000 New York dairy farmers, to grow sales and trust in dairy foods, dairy farmers, and the dairy community.

The foundation of this work is a national Unified Marketing Plan that DMI develops and implements in partnership with a nationwide network of dairy promotion organizations – including New England Dairy – that aligns promotion strategies and activities focused on core priorities set by dairy farmers and approved by the farmer-driven boards of national, state, and regional promotion organizations.

**Program #1: Accelerating Additional Dairy Product & Ingredient Sales**

DMI continued to grow dairy sales through targeted partnerships with national foodservice companies Domino's, McDonald's, Pizza Hut, and Taco Bell. Cumulatively, these companies moved dairy through nearly 1,100 stores in New York and nearly 900 stores across New England in 2021.

DMI partners also helped advance fluid milk innovation and value-added milk sales.

2021 partner results included:

- Total domestic foodservice partnerships grew 300 million additional pounds (milk equivalent), a 3 percent growth compared to 2020
- Domestic partners launched 29 new dairy-centric products (9 from foodservice partners and 20 from fluid milk/retail partners)
- Established a new partnership with General Mills, a global cereal, yogurt, and other dairy-centric category leader
- Distributed 664 million pounds of dairy to those facing food insecurity through Feeding America, an increase of 42 percent compared to 2020

DMI also continued its partnership with ecommerce giant Amazon. These efforts contributed to overall ecommerce milk sales growth by 17.5 percent and natural cheese sales by 10 percent in dollar sales (Source: Information Resources Inc. E-market insights).

DMI, through the checkoff-founded U.S. Dairy Export Council (USDEC), also contributed to U.S. dairy export sales growth. In 2021, U.S. dairy exports grew in volume by 11 percent, surpassing 2020's record-year.

#### Program #2: Building Trust in Dairy Among Youth and Targeted Consumers

Trust remains the foundation for building a compelling consumer product experience to spur sales.

Due in part to the efforts of DMI and state and regional organizations, consumer trust in dairy increased by 4 points ("trust completely"), ages 13-75. This is an indication that consumers were in a different, more positive dairy state of mind in September 2021 compared to December 2020.

Efforts to increase trust in dairy included:

- "Reset Yourself with Dairy" Campaign – Creative campaign to tap into Gen Z's desire for a moment of "calm" that only dairy can deliver. Results: 599 million impressions and an additional 97,000 dairy purchases added to carts in pilot tests.
- Smoothie Blitz – NFL players competed in the kitchen with their favorite smoothie recipes. Results: 105 million impressions
- Dairy Dream Team –Worked with popular influencers to drive relevance and love of dairy products through recipe content, lifestyle tips, and offered a peek into the lives of dairy farmers. Results: 111.5 million impressions
- Fuel Up to Play 60 –Provided a "Fresh Start" for teachers with a new website, educator dashboard and "Student Zone" app. Results: 16 million+ impressions, including newsletters, social media, family-night digital events and Student Zone app downloads

### Program #3: Positioning Dairy in a Global Food System

In an increasingly competitive global market, efforts to position U.S. dairy in a global food system focused on three areas of work:

- Strengthen scientific and industry action proof points and messages that help demonstrate U.S. dairy's commitment to sustainable nutrition
- Solidify dairy's position in the Dietary Guidelines for Americans for improving health and reducing chronic disease
- Secure support from thought leaders and decision makers

As part of this work:

- DMI's third-party support for dairy environmental stewardship grew to commitments of more than \$36 million in grants and partner support.
- More than 49 million earned and social media impressions achieved as part of an eight-week dairy sustainability campaign that leveraged key moments such as Earth Day, the United Nations Food Systems Summit and other key thought leader events
- The Innovation Center released its U.S. Dairy Sustainability Report that highlighted U.S. dairy's accomplishments in environment, food security, animal care and workforce development; earned media relations around the report generated 72 million impressions
- DMI thought leader outreach and nutrition research resulted in 57 articles, publications and scientific papers covering topics relevant to advance dairy's position – and tackled misperceptions about dairy to maintain or re-establish credibility with consumers and thought leaders.

### **Milk For Health on The Niagara Frontier (MFH)**

[www.milkforhealth.org](http://www.milkforhealth.org)

Contract Amount: \$465,000

Summary of Company: Incorporated in 1949, Milk for Health is one of the oldest dairy promotion organizations in the United States. Milk for Health consists of seven dairy farmer board members from across Western New York, a full-time employee, and, recently, one part-time employee. Since day one, the goal of the organization has been to support the dairy farmers of Western New York, promote dairy products, and educate about the goodness of milk. In 2019, the organization reorganized and took a more modern direction in their programs. The new up-to-date strategy being implemented is much more prevalent for the high-tech, fast paced world of today.

#### ***Priority Areas Addressed:***

**Goal #1 - Increase the consumption of New York milk and dairy products by youth (lunches, breakfasts, and other offerings)**

**Goal #3 - Improve the image of dairy products and/or dairy producers among consumers, thus improving the acceptance and consumption of New York milk and dairy products**

Conventional Television

Budget: \$215,000

Milk for Health continued advertising on conventional television throughout the Buffalo broadcasting area in 2021. Both the “Milk is Amazing” and “Farm to Table” commercials were aired on close to 12,000 spots making over 13 million impressions. Thanks to our broker working diligently to get our organization many low and no cost spots on our contract, we exceeded our goals yet again.

Connected Television

Budget: \$60,000

Streaming or connected television has given us our biggest “bang for our buck” in terms of impressions. Coming into 2021, we were unsure what type of goals to set for this project, but we largely exceeded them. In earlier presentations we discussed our partnership with Bone Cold TV, a hunting television show created by Western New Yorkers. This partnership included the first four streaming channels below.

- Hunt TV: 3,288,000
- Carbon TV: 600,000
- Wild TV: 1,200,000
- Pride TV: 480,000
- Hulu: 520,337
- YouTube: 4,004,000

For our 2021 campaign year, we were testing the waters on targeted demographics. Now that we have a base year set, we are able to use the reports and see where our future campaigns will receive the most views and impressions.

Explore and More

Budget: \$15,000

Our relationship with Explore and More Children’s Museum continued to grow throughout 2021. We did various events throughout the year with them including, cooking, activities, butter making, crafts, parades, and celebrated several national holidays, such as National Cookie Day. But the crowd favorite was bringing live calves and cows right to the museum. We did this on several occasions including National Cow Day, Kids Day, National Farmers Day, and for the summer camp program. Children and adults were able to touch, play, and feed the calves. Having activities that engage all the senses leaves the participants with lifelong memories. While they feed the calves, we were able to talk with them, answer questions, and educate. During the summer camp program, we bring

calves to the museum for a feeding activity and then later in the week, we have a virtual farm tour, so the children get to meet the calves' "moms" and see where they live. The feedback on these events has been overwhelming and they have resulted in other organizations, such as the YMCA of Buffalo, reaching out and requesting that we participate in their 2022 programming.

Rob Allen continued his magic shows at the museum. His act includes a trivia wheel set up next to the barn with our sponsored cow. He offers participants a "trick or a treat" and teaches them dairy facts while having fun with magic. The museum continuously requests him to come back.

Unfortunately, due to Covid restrictions in Erie County, the museum had to sell presale only tickets and limit their daily capacity, so they had very few school groups; as a result, we did not reach our goal number of 250,000 attendees.

#### Magician

Budget: \$25,500

The ongoing pandemic in 2021 caused us not to reach our goal of 85 school assemblies. Rob was able to complete 14 performances towards the end of the year. Fortunately, the schools are opening back up to assemblies and he has already completed four weeks of school assemblies for 2022.

Olcott Park had a different type of feel this year also. Even though the park was open to visitors unlike 2020, they did not allow Rob to perform as he normally would in a large assembly. Rob adapted and instead spent his day greeting visitors as they entered the park with his trivia wheel and tricks or treats. Rob showed a little dairy magic to an average of 192 people each of his 42 days; this was the best year to date for the park as the 2019 numbers were 180 per day.

#### Web and Social

Budget: \$42,388

Milk for Health's social media presence continued to increase throughout 2021 with the introduction of Reels on Instagram and creating a TikTok. MFH continued to focus on delicious recipes that include dairy, farmer image, and general dairy education.

MFH exceeded the goal number of videos, posts, and Instagram followers. The Facebook following did not reach its goal of 15,000. The algorithm has changed and it is getting harder and harder to grow an audience on Facebook without paying large amounts of money in advertising and boosted posts. MFH believes that organic growth is the most honest way to grow an online community, so MFH tries it's best to limit the paid ads and focus on the trending platforms such as Instagram and Tiktok.

MFH added 30 new recipes to its website this year and have started a Pinterest page, which is public in 2022. The website started to get a facelift and the updated version is available in 2022.

## Fairs and Events

Budget: \$31,102

As events popped up throughout 2021, many canceled; however, we participated in many events over the year, including:

Growing Through Showing- we teamed up with NYAAC to teach local dairy kids about AgVocating

- Wyoming County Fair
- Allegany County Fair
- Genesee County Fair
- Churchville Chili Career Days
- Ramblin Lou Christmas Show

As always, Erie County Fair is our largest event. We had over 90 dairy farmer volunteers help run our booth throughout the 12 days. Even with Covid restrictions the fair welcomed 981,264 visitors! We handed out over 16,000 giveaway items, including whole and chocolate milks, cheese strings, pens, stickers, and more. Our booth stayed similar to the 2019 booth with the 14-foot-tall milk carton photo booth, trivia wheel, and educational and entertaining videos playing. Attendees were able to interact one on one with dairy farmers from across Western New York.

In November and December, Milk For Health sponsored the Festival of Lights at the Erie County Fairgrounds. This drive-through light display saw 14,954 vehicles loaded with families. Our sponsorship included being able to put hot chocolate in giveaway bags with a recipe to make it with Real Milk, a spot on the radio loop that is played as attendees drive through the display, signage, web advertising, social media posts, and being included on the festival's radio advertising.

## Buffalo City Schools

Budget: \$15,000

Our partnership with the Buffalo Community Schools continues to grow. Unfortunately, throughout most of the early part of the school year, the schools were still in a virtual learning mode, which limited the amount of contact and events we could have with students and families. At the end of June, we were able to have our first in person event to celebrate Dairy Day! The event was organized with live calves to feed and pet, dairy-related games, butter making, and giveaways. In total, we participated in 33 Saturday Academies and Summer Camp programs, which put us in contact with roughly 10,000 City of Buffalo residents!

Here are a few examples of the themes:

- Dairy Scary Trail Mix
- Breeds from Around the World
- Great Kindness Challenge- Dairy Cattle Welfare FebruDairy
- Spring Fever
- Little Leaders- Women in Dairy Earth Day
- How Milk Makes You Grow Dairy Days

We are looking forward to 2022 as we have gained more staff to help facilitate the growing number of requests from schools to have us join in on their Saturday programming.

***Priority Areas Addressed:***

**Goal #1 - Increase the consumption of New York milk and dairy products by youth (lunches, breakfasts, and other offerings)**

Cooking Classes

Budget: \$4,500

Due to continued Covid restrictions in the spring, we were unable to complete any of the cooking classes before the end of the 2021 school year. The plan was to complete our goal number of classes throughout the fall and winter months. The board is requesting an extension to complete the 30 classes that were originally planned for 2021 to be completed in 2022, along with the 30 already approved for 2022. As of February 1st, nine of these classes have already taken place and with our additional employees and volunteers, 60 classes will be able to be achieved.

***Priority Areas Addressed:***

**Goal #4 - Improve communication to dairy producers to inform them of how they can assist in improving the consumption of New York milk and dairy products**

Farmer Lunches

Budget: \$3,000

Due to continued Covid restrictions in the spring, the board decided to postpone the two farmer luncheons until the late fall/early winter months, once harvests were over. The board is requesting an extension to host these events in April of 2022.

**New York Animal Agriculture Coalition (NYACC)**

<https://www.nyanimalag.org/>

Contract Amount: \$200,000

Summary of Company: The New York Animal Agriculture Coalition (NYAAC) is a farmer-founded and funded not-for-profit organization that strives to enhance the public's understanding of and appreciation for animal agriculture and modern farm practices. NYAAC is effective in doing so by engaging the public in conversations about animal agriculture and empowering farmers to tell their story firsthand.

***Priority Areas Addressed:***

**Goal #3 - Improve the image of dairy products and/or dairy producers among consumers, thus improving the acceptance and consumption of New York milk and dairy products**

Displaying Dairy in New York City

Budget: \$95,500

Displaying Dairy in New York City began when NYAAC purchased two fiberglass cows and collaborated with two local artists to paint them before sharing them across social media and in person to promote New York dairy farming. The goal of utilizing these two fiberglass cows was to create something different, a hook, to get people to want to ask questions and learn more. We utilized social media to create engagement for a naming contest and then had the cows “virtually” visit farms and prominent locations on their way down to Metro New York. The two fiberglass cows made their debut at the Dairy Cow Birthing Center at the New York State Fair before heading to New York City, in person. One cow is currently stationed at the Queens County Farm Museum, and one is at John Bowne High School being utilized as part of their animal science/dairy science curriculum unit. This project will continue to gain traction this year with more visitors to the museum who will be welcomed by our beautiful cow, signage promoting dairy products, and the dairy industry and engagement opportunities throughout the acreage of the museum.

***Priority Areas Addressed:***

**Goal #2 - Increase retail sales of New York milk and dairy products**

Sharing Dairy in Words and Voices

Budget: \$39,750

Sharing Dairy in Words and Voices provided farmers the opportunity to share their words and their voice through published opinion editorials in New York City. NYAAC collaborated with six different New York dairy farmers to write an opinion editorial, all with different topics, that were pitched and published in New York City and Long Island publications. The “words” portion was the actual op-ed that was pitched to the media outlets and the “voice” portion was a voice over of the farmer reading their op-ed. A video was then created utilizing footage from the farm that was featured, and the voice was used as the narration of the video. These videos were posted on social media and the NYAAC website and then shared. The six topics that were discussed included

environmental sustainability, animal care, dairy product processing, essential employees, dairy products, and animal health. All of the pitched op-eds and social media promotion resulted in hundreds of thousands of impressions from print and online media placements in New York City and beyond.

***Priority Areas Addressed:***

**Goal #3 - Improve the image of dairy products and/or dairy producers among consumers, thus improving the acceptance and consumption of New York milk and dairy products**

Neighbor Newsletters

Budget: \$14,750

The Neighbor Newsletter project is a back to the basics project allowing farmers to make connections with their local community members. Farmers collaborate with NYAAC to develop and create a newsletter that is sent through the mail to neighbors of surrounding areas. The newsletters showcase what's happening on the farm so as neighbors drive by, they have a better understanding of what they are seeing or smelling in rural neighborhoods. The success of this program has been positive over the years and this year, we were excited to offer some funds for farms to complete a newsletter. The funds provided financial assistance for printing and postage. In 2021, NYAAC helped 12 farms create 15 newsletters reaching more than 26,000 people in 11 different communities. A simple, back to the basics format allows for more personal connections to be made and faces to be seen in local communities.

Indulge in Dairy TV Commercial

Budget: \$20,000

Due to the late notice of full capacity of the 2021 New York State Fair, NYAAC reallocated its funding from the Dairy Cow Birthing Center to a TV campaign focused on choosing New York dairy products during the holiday season. This commercial was created last year so there was no production cost this year and 100% of the funds were spent on a complete media buy in New York City. The campaign showcased New York dairy farmers and a variety of dairy products and was able to show a connection between dairy farmers and dairy products.

The 30 second Indulge in Dairy commercial was shown in New York City and was shown on streaming applications as well. The advertisement ran on cable television and was aired more than 6,000 times between November 20 and December 31, 2021. It was aired on 11 different networks, with the Disney Channel airing it more than 1,600 times followed by the SyFy channel, Spectrum News, and the Cartoon Network. The ad was streamed on a variety of devices and had a 97% completion rate, resulting in more than 135,000 impressions.

## Dairy Cow Birthing Center

Budget: \$30,000

The Dairy Cow Birthing Center was back in action in 2021 for the 8th annual event. NYAAC welcomed 36 uddermiracles (calves) into the world during the 18-day State Fair. With the help of more than 150 dairy farmer and industry volunteers, NYAAC was able to welcome 1/3 of the State Fair attendance through the tent and continued to have excellent engagement with our online audience. The hook remains the same at the Birthing Center each year of wanting people to visit to witness the miracle of life, but what continues to keep them engaged and excited each year is the opportunity to talk to farmers, in person. We were able to gain more than 2,600 online followers and had more than 1.3 million online impressions over the 18-day span of the Fair. We continue to learn that most of our visitors do not come from an agricultural background and come to us year after year. We look forward to continuing to bring this experience back in 2022 while looking ahead to a potential 10-year celebration in 2023.

## American Dairy Product Institute (ADPI)

[www.adpi.org](http://www.adpi.org)

Contract awarded: \$147,000

Summary of Company: ADPI, a not-for-profit trade association comprised of 260+ members, has a singular focus to grow the use of dairy ingredients and related products as produced, sold, and distributed by its members. ADPI membership ranks include organizations from all genres of the dairy industry from producers, processors, seller/marketers, equipment, and service providers. ADPI is funded by membership dues as well as revenues generated from various conferences, seminars, symposia, and training and development courses offered to members and industry stakeholders. ADPI legacy organizations are the Evaporated Milk Association (1923), American Dry Milk Institute (1925) and Whey Protein Institute (1971) merging in 1986-87 to form ADPI®.

### ***Priority Areas Addressed:***

**Goal #3 - Improve the image of dairy products and/or dairy producers among consumers, thus improving the acceptance and consumption of New York milk and dairy products**

**Goal #6 - Participate in national programs that influence an increase in consumption of milk and dairy products**

Funded Program: The Strong Inside® (TSI) Protein Messaging Campaign

TSI campaign promotes the benefits of “proteins from milk” to consumers through the effective and efficient use of social media and consumer influencers. This program is voluntarily funded by participating members and originated in 2019. The TSI campaign

promotes, and in some cases defends, the goodness of dairy derived proteins from milk as compared to “non-dairy” alternatives. It is unique to the industry and is positive and proactive in its approach and not negative or “anti” towards competitors. Its objective is to provide consumers with facts, backed by science, relative to “proteins from milk” as there is growing misinformation via “social media” channels related to the dairy industry and its products. No other organization or campaign in the industry today focuses on dairy ingredients, especially proteins from milk, with consumers and influencers.

NY DOP provided funds to support the overall national messaging campaign (\$100K) in addition to “NY State-centric” activities (\$47K) for 2021.

ADPI’s Marketing Agency partner for the campaign was Padilla| Food Minds based in Chicago, Minneapolis, and New York. Their activities were managed by an ADPI member- staffed “Steering Committee” on a daily, weekly, and monthly basis throughout the campaign. All activities and related funding thereof were developed, reviewed, and approved by the TSI campaign’s Steering Committee and a Marketing Task Force assigned for the role.

### **Burt Media (Previously Jeb & Company)**

<https://burtmedia.co>

Amount of contract awarded: \$360,000

Summary of Company: We are a social-first media company that helps individuals, brands, and municipalities utilize content and paid media to impact their audiences online. Our core services include content strategy and development, paid advertising, research, email marketing, and social media strategy.

[www.burtmedia.co](http://www.burtmedia.co)

#### ***Priority Areas Addressed:***

##### **Goal #7 - Conduct research projects to ensure the safety and/or expand the demand for New York dairy products and dairy ingredients**

Research

Budget: \$60,000

2,000 interviews were conducted with individuals throughout New York State as an accurate sample population of New York citizens. Research gleaned insights into opportunities for dairy marketing campaigns and gave the board and partners a clearer picture of the current perception of dairy in New York. Research was broken into two parts: pre-campaign and post campaign.

#### ***Priority Areas Addressed:***

##### **Goal #2 - Increase retail sales of New York milk and dairy products**

**Goal #3 - Improve the image of dairy products and/or dairy producers among consumers, thus improving the acceptance and consumption of New York milk and dairy products**

Content Development

Budget: \$50,000

Created #milkworks campaign videos, farmer spotlight videos, and variations for ads across Facebook, Instagram, and YouTube. Links to main videos below:

Milk Works Launch Video

- <https://www.youtube.com/watch?v=Fr8UHFPfdMU>
- <https://www.instagram.com/p/CR7IliUjs5d/#advertiser>
- <https://www.facebook.com/314811345304167/posts/4092420637543200>

Tiashoke Farm

- <https://www.youtube.com/watch?v=0xqZHoebJcs>
- <https://www.instagram.com/p/CUIrrV3gpTK/#advertiser>
- <https://www.facebook.com/NYAnimalAg/videos/565760921278845>

Tollgate Farm

- <https://www.youtube.com/watch?v=1jaK1bKuYrY>
- <https://www.instagram.com/p/CVQRjvMgbUw/#advertiser>
- <https://www.facebook.com/314811345304167/posts/4311471145638147>

Dykeman Farm

- [https://www.youtube.com/watch?v=jE\\_oq8Elkcc](https://www.youtube.com/watch?v=jE_oq8Elkcc)
- <https://www.facebook.com/NYAnimalAg/videos/281410810480499>

Coon Brothers

- <https://www.youtube.com/watch?v=llj5qysZ67l>
- <https://www.instagram.com/p/CViXOsfjsJ5/#advertiser>
- <https://www.facebook.com/314811345304167/posts/4369710409814220>

Stormfield Swiss

- <https://www.youtube.com/watch?v=vvcUPp5kLQk>
- <https://www.instagram.com/p/CV0Y4sYDZDy/#advertiser>
- <https://www.facebook.com/314811345304167/posts/4383728078412453>

Hawthorne Valley

- <https://www.youtube.com/watch?v=AlHUSjz7Uns>
- <https://www.instagram.com/p/CWMKCKtjZU/#advertiser>

- <https://www.facebook.com/314811345304167/posts/4420236044761656>

Milk Works - Day of Milk Video <https://www.youtube.com/watch?v=3UkMExVdngQ>

Paid Media - Paid advertising ran across YouTube, Instagram, and Facebook, driving viewership towards videos and ad variations and graphics.

Budget: \$250,000

Relevant metrics:

- 7.4 million views
- 4.6 million ad engagements
- \$7.8 Cost-Per-Mille (CPM)

## **New York Agriculture in The Classroom (NYAITC)**

<https://newyork.agclassroom.org/>

Contract amount: \$450,000

Summary of Company: New York Agriculture in the Classroom is an outreach program of Cornell University. Our goal is to increase the agricultural literacy of teachers and students in the formal education setting. An agriculturally literate person understands and can communicate the source and value of agriculture in their daily lives.

### ***Priority Areas Addressed:***

#### **Goal #1 - Increase the consumption of New York milk and dairy products by youth (lunches, breakfasts, and other offerings)**

Staff and Materials for County Cornell Cooperative Extension (CCE) Associations

Budget: \$299,316

NYAITC support was provided to seven Cornell Cooperative Extension counties to provide direct classroom dairy education during the formal school day. County CCE staff worked closely to communicate with schools and teachers to build relationships, schedule visits, and build thoughtful tools for hands-on student learning.

Student learning took place inside classrooms and outside school walls to allow for as many in-person lessons as possible. Virtual lessons were very common throughout the school year. Most lessons included students consuming dairy products.

Of significance is the frequency of visits CCE educators were able to invest in one classroom. With concept reinforcement happening with each lesson and dairy experience, it was reported that 290 classrooms had two to seven dairy lessons.

Counties included: Broome, Madison, Monroe, Livingston, Nassau, NYC, St. Lawrence, and Wyoming.

- 3,003 classrooms received dairy lessons.
- 109,082 students were reached.
- 58,069 total contact hours of dairy education were invested in New York State schools.

#### Virtual Field Trips

Budget: \$21,462

NYAITC hosted 19 Virtual Field Trips, including the popular Cow to Cone series.

Cow to Cone was a four-part field trip, which outlined the journey of dairy production from raising calves, exploring dairy nutrition, milking, and watching how ice cream is made.

County CCEs received equipment and training to host their own Virtual Field Trips to showcase dairy production and the related industries in their communities. Topics included robotic milkers and general care of dairy animals.

All NYAITC Virtual Field Trips were paired with an inquiry box. Inquiry boxes were designed to provide a unique sensory experience for students during their virtual experience. The boxes included items such as animal feed to touch and smell, tools used daily on the farm, and dairy products to sample.

- 19 Virtual Field Trips
- 14,276 students participated in the Virtual Field Trips

#### Lessons and Resources for Learning

Budget: \$7,620

NYAITC provided curated lessons for teaching key concepts from the K-12 curriculum using dairy as the lens for learning, taught by CCE educators either in-person or virtually.

Standards-aligned lessons and kits included, but were not limited to:

- Cheesemaking: From Liquid to Solid; understanding phases of matter by making cheese.
- Lactose Lab: exploring the chemistry and composition of milk.
- Sun, to Moo, to You!: investigating the transfer of energy in the process of making milk.
- Dairy Farming in a Glove: observing how common crop seeds grown on a dairy farm sprout and investigate the conditions necessary for germination to occur.

1,003 classrooms were reached through the provided and developed lessons and kits. 15,252 students received direct instruction with full lessons and tools.

#### Agricultural Literacy Week

Budget: \$54,469

Agricultural Literacy Week is an existing program of NYAITC, started in 2006. One agriculturally accurate book is selected and read to 75,000 students across the state. A hands-on lesson related to the book is developed and it is facilitated by volunteer farmers, FFA & 4-H members, and professionals in agriculture. At the end of the visit, the book is donated to the classroom library.

For the first time since the inception of the program in 2006, dairy was the featured topic with a book entitled Chuck's Ice Cream Wish: Tales of the Dairy Godmother by Violet Butler.

Knowing the limitations schools had placed on in-person visits, modifications were made to ensure a successful program. The hands-on activity featured making ice cream in a bag instead of making a single large quantity of ice cream for the classroom. NYAITC created and put together 75,000 individual kits.

Additionally, we produced nine high-quality videos of farmers reading the book, including a version in Spanish. Featured readers included Commissioner of Agriculture and Markets Richard Ball and the Ziehm and Bossard families. Additional videos were produced of students who live on a dairy farm talking about their lives and elements of growing up on a dairy farm.

- 75,000 students and 2,000 classrooms participated in Agricultural Literacy Week
- 2,100 books were donated to schools
- 1,300 volunteers led the book reading and activity

## Cornell University Research Projects

[www.foodscience.cals.cornell.edu/research](http://www.foodscience.cals.cornell.edu/research)

Milk Quality Improvement Program (MQIP)

Amount of contract awarded: \$640,740

Summary of Company: The MQIP is the core overall dairy foods program at Cornell, providing research and extension support for raw and finished product quality improvements and product safety in New York. The MQIP provides broad expertise in dairy microbiology, including microbial food safety and spoilage, along with key expertise in training New York dairy manufacturers, playing a critical role in ensuring that New York has a qualified dairy processing workforce. This program is the only one of its kind in the US, committed to serving the New York dairy industry to ensure a plentiful supply of high-quality dairy products to consumers in the state and beyond.

### *Priority Areas Addressed:*

**Goal #7 - Conduct research projects to ensure the safety and/or expand the demand for New York dairy products and dairy ingredients**

Dairy Product Quality and Safety Program (DPQSP; MQIP "core" program):

Budget: \$448,400

The Milk Quality Improvement Program (MQIP) provides comprehensive support to the New York dairy industry throughout the farm to processing continuum. On behalf of the NY dairy farmers, who have continuously supported this program since 1979 through check-off dollars, the MQIP prioritizes program activities and outcomes that facilitate the long-term success of the NY dairy industry through DPQSP efforts. Key metrics for 2021 include:

- Seven peer reviewed publications and three lay articles published;
- Submitted seven requests for additional funding from non-DPO sources and received \$600,000 in leveraged funding;
- Conducted 32 dairy foods training courses, reaching 757 individuals with 21,668 contact hours;
- Collected over \$600,000 in fees from workshops and from processor support through the food processing development laboratory, and;
- Supported NY processors and producers through five deployments of the MQIP rapid response team. In 2021, our interactions with the NY dairy processing industry reached businesses that process ~95% of the milk in NY, demonstrating the reach of our program and an overall high level of stakeholder impact.

Supplemental Project 1 - Implementation of Listeria Control Strategies in Small Dairy Facilities:

Budget: \$74,340

Recalls or foodborne illness due to pathogen contamination of food products can be one of the most detrimental events that occurs for consumers, food businesses and entire industries. The primary pathogen of concern for contamination in dairy foods is *Listeria monocytogenes*, as this pathogen survives in processing environments for many years, grows at refrigeration temperatures and has a high mortality rate for people who become ill with listeriosis, the disease caused by *Listeria monocytogenes*. Progress in 2021 focused on in-plant environmental sampling of nine small and medium-sized dairy processing facilities in NY for presence of *Listeria*, completing 7-12 months of sampling at each of the facilities. Results indicate that some facilities had concerning levels of *Listeria* contamination in the processing environment, a serious risk to dairy food safety, and the reputation of NY dairy products in general. Our team observed common failures in cleaning and sanitation as well as good manufacturing practices in all facilities, with an overall lack of investment in strong food safety attitude. The learnings from these results will be critical in developing *Listeria* control workshops, and ultimately improving the safety of NY dairy products.

Supplemental Project 2 - Defining Raw Milk Quality Parameters that Affect Greek Yogurt Yield and Quality:

Budget: \$74,340

NY manufacturers more yogurt than any other state in the US, making this product an important contributor to the overall NY dairy portfolio. In particular, Greek yogurt has driven the growth in the yogurt category in NY and beyond. Due to the importance of this product for the NY dairy industry, it is critical that manufacturers of Greek yogurt understand the driving factors that affect yield and quality of this product. Progress in 2021 focused on understanding the impact of raw milk quality on the yield of Greek yogurt as well as development of a Greek yogurt model which will ultimately allow industry stakeholders to make data driven decisions to optimize yield and quality. Our results showed no discernable impact of somatic cell level on yield when milk with SCC within realistic industry limits (i.e., SCC <400,000) was used, however a trend was seen for reduced yield when raw milk with and without high bacterial load was held for 72 hours prior to processing. Additional follow-up shelf-life studies will evaluate the impact of raw milk quality parameters on factors that impact consumer acceptance, namely flavor and body characteristics.

Supplemental Project 3 - Technology scouting and evaluation for new processing technologies for New York dairy:

Budget: \$43,660

The critical need for cost-effective innovation in the NY dairy industry strongly demands a focused approach to identify and evaluate new processing technologies with the potential to further expand the demand for NY dairy and dairy ingredients. Our progress on this project in 2021 included efforts on all three objectives, including;

- Develop and implement a process to identify new dairy processing technologies emerging around the globe;
- Evaluate dairy processing technologies that are identified as promising, and;
- Distribute information to NY dairy processors. Through this process, we have identified 27 new technologies by reviewing peer-reviewed literature, patents, trade journals/magazines and attending a processing technology conference. Our team has not only developed a database of these technologies but has provided expert assessment of the value to NY dairy companies through easy to access fact sheets. Finally, we have communicated this resource to NY dairy companies through a Cornell Dairy Foods Extension newsletter article as well as directly to individual processors. This project provides critical expert assessment of technologies, an important step in setting up NY to support innovative dairy processing companies that utilize novel technologies.

## **North East Dairy Food Research Center (NEDFRC) Research Projects**

Contract Award: \$725,545

Northeast Dairy Foods Research Center is a program within Cornell University. It was founded in 1986 and is one of six regional research centers founded by the National Dairy Promotion and Research Board. The Dairy Center facilitates and coordinates interactions

between Cornell faculty and dairy product manufacturing companies in NYS and beyond. The Dairy Center holds an annual meeting for dairy processors to interact directly with faculty to achieve technology transfer of research findings and facilitate faculty/company interactions that lead to company funded research projects with individual faculty members at Cornell.

**Priority Areas Addressed:**

**Goal #7 - Conduct research projects to ensure the safety and/or expand the demand for New York dairy products and dairy ingredients**

Project 1 – 2021 Contract Period PI – Dave Barbano

Title: Dairy Center technology transfer (continuing)

Budget: \$ 52,274

End of Year Project Summary: We are focused on implementation of research findings on auto-oxidized off-flavor in individual farm milks that produce consumer complaints of off-flavors in milk purchased at NYS supermarkets. We have worked closely with the fluid milk processor, traced the off- flavor back to a group of farms and have been working with cooperative field staff to understand the origin and make corrections. A group of about 20 farms that have this issue are all small dairies. The problem is seasonal (more in the winter) and seems to be related to airborne compounds that transfer to the milk and promote chemical oxidation of milk fat. We have been working to correct this at the farm level. This year we have been collaborating with a NYS plant on improving milk protein-based beverage flavor and textural properties for Ultra Heat Treatment (UHT) and retorted milk-based beverages to implement findings of funded research projects to reduce thermally induced browning and sulfur- eggy off flavors. We work with NYS dairy plants to implement more accurate calibration of infrared analyzers to control product composition. We have implemented our calibration samples and support in most processing plants and milk payment testing laboratories in NYS. Due to COVID and limitation on travel to plants, we need a no-cost extension for this project.

Project 2 – 2021 Contract Period PI – Sam Alcaine

Evaluating skim milk as a substrate for the biomanufacturing (year 2 of 2)

Budget: \$ 90,821

End of Year Project Summary: The goal of this project was to evaluate the use of the yeast *Brettanomyces claussenii* to selective ferment skim milk, which can sometimes be found in excess, and produce a galactose-rich stream that could be used in other applications like galactooligosaccharide (GOS) production.

Lactose is composed of glucose and galactose, and our previous work in dairy by-

products found that *Brettanomyces* could selectively ferment glucose and leave galactose. This year's work looked to improve residual galactose levels after fermentation by optimizing both starting skim milk powder levels and the level of yeast used. Our results found that high levels of skim milk powder, along with an intermediate level of yeast, resulted in higher residual galactose levels.

We did observe protein coagulation in our fermentations, so this year we evaluated a process where skim milk powder was acidified and then heated to improve protein stability, a process used in some Japanese dairy drinks, and then fermented with *Brettanomyces* to produce a galactose-rich beverage with dairy protein, with positive results. Some of the results were presented at the 2021 ADSA conference, and the student won the poster competition for their work. The results are now being written up for journal submission.

Project 3 – 2021 Contract Period PI – Syed Rizvi

Products from lactose hydrolyzed skim milk. (year 2 of 2)

Budget: \$ 105,020

End of Year Project Summary: The dairy industry converts a lot of surplus milk into non-fat dry milk, but its utilization has been limited by the fact that it contains almost 50% lactose and about 70% of the global population is lactose intolerant. A process to convert skim milk into lactose-hydrolyzed milk powder was developed. Extruded products were made from either 30% solids concentrated lactose hydrolyzed skim milk (LHSMC) or lactose hydrolyzed skim milk powder (LHSMP). The formulations made with LHSMC had lower lactose hydrolyzed skim milk content than the formulations made with LHSMP because the solids amount is limited by the liquid flow rate going into the extruder/formulation. The products made with the LHSMC showed better expansion characteristics and superior mouth feel compared to the products made with LHSMP. Products made with LHSMP had a higher protein content/lower percentage of starch. The LHSMP product that was made in a 50/50 ratio with milk protein concentrate had the best expanded structure and mouth feel out of the LHSMP products made thus far. This formulation will be improved further by adjusting processing parameters and drying conditions. A no-cost extension to make up the time lost due to Covid-19 has been requested.

Project 4 – 2021 Contract Period PI – D. Barbano / M. A. Drake

Identification of sources of undesirable flavors in aseptic (UHT) milk (year 2 of 2)

Budget: \$ 72,729

End of Year Project Summary: Our objectives are to determine the impact of differences in packaging on sensory quality and consumer acceptance of 1% milk and the impact of time and temperature of storage of UHT milk (Extended Shelf Life (ESL) is stored at refrigeration temperature and aseptic at room temperature) on sensory quality and

consumer acceptance of 1% milk. This project is a collaboration between university and industry. Both COVID-driven university travel restrictions and company COVID policies have delayed the project. In spite of this, we have established that aseptic (sterile) UHT milk cooled to room temperature immediately after the UHT process (normal procedure) versus immediately cooling to 40oF after UHT, develops a different flavor profile during storage that has nothing to do with microbial growth. We find that flavor changes may be driven by temperature dependent chemical change in the milk. We need to understand more about the chemical changes that produce this change in sensory profile during storage. We will determine if cooling and holding of shelf-stable milk cold for a short time (a couple of days followed by room temperature storage) will change milk flavor when the sterile cooled product is subsequently held in storage at room temperature. A no-cost extension of this project is needed.

Project 5 – 2021 Contract Period PI – C. Moraru

Microwave dehydrated, shelf stable cream (year 1 of 2)

Budget: \$99,479

End of Year Project Summary: The goal of this project is to develop a novel microwave vacuum drying (MVD) process for the manufacture of shelf-stable dehydrated cream, that can be stored and shipped at room temperature. During the last reporting period, we accomplished the following:

- Completed process optimization for MVD of heavy cream. Drying parameters to achieve high quality dehydrated cream (pressure, microwave power, product thickness, drying time) have been identified, and are similar to skim milk (previous project) and cheese (DMI funded project). This opens the opportunity for dairy processors to process different dairy products in the same MVD machine.
- Experiments on the rehydration of dehydrated cream are being finalized. We were able to achieve easy reconstitution of the cream powder, utilizing readily available equipment (blender, homogenizer) and easy to follow protocols. The reconstituted product is high quality heavy cream that retains full functionality and has a similar microstructure as the initial heavy cream. This reconstituted cream can be converted into whipped cream or butter. The properties of these products are being evaluated. Additionally, we are evaluating the effect of cream homogenization on the functional properties of the reconstituted product.

Project 6 – 2021 Contract Period PI – Syed Rizvi

Quick dissolving milk protein-rich extruded baby foods (year 1 of 2)

Budget: \$ 90,580

End of Year Project Summary: The project is aimed at developing a nutritious, convenient, and novel milk protein-rich, weaning, and geriatric foods, especially for the elderly with dysphagia. Extrudates containing milk protein concentrate (MPC) and MPC with 14%

added sucrose (MPC-S) were generated using the supercritical extrusion process and their physical and rheological properties determined. Extruder operating parameters, pressure, and amount of carbon dioxide injected into the extruder to puff the product at low temperatures were identified and utilized to generate texturally desirable products. The addition of sugar in the formulation resulted in decreased viscosity and better extrudate dispersions in water compared to MPC extrudates, indicating improved deformability and better disintegration properties. Incorporation of skim milk powder to lower the cost along with small amounts of sodium hexameta phosphate (SHMP) or sodium lauryl sulfoacetate (SLSA) in the formulation is currently under evaluation and characterization of the extrudates is planned for the next quarter. Both the regular as well as lactose hydrolyzed skim milk powders will be utilized to evaluate their relative importance in generating a consumer-acceptable products of commercial utility.

Project 7 – 2021 Contract Period PI – Ali Abbaspourrad

Sequestration of Bovine Milk Oligosaccharide (BMO) (year 1 of 2)

Budget: \$ 117,882

End of Year Project Summary: Acknowledging the fact that human milk has limited resources and its precious components, such as human milk oligosaccharides (HMOs), have vital usage for cognitive growth and boosting the immune system of infants; therefore, the demand justifies the innovation for recovery of such an essential compound from other abundant resources such as whey permeate. Whey permeate has been considered as a waste stream of the dairy industry that is typically dried and sold at low prices. The studies confirmed that the whey permeate is a good source of bovine milk oligosaccharides (BMOs). Several molecular and functional similarities of BMOs have been reported compared to HMOs. Earlier attempts for sequestering BMOs from whey permeate using ultrafiltration technologies lack efficiency and sustainability. To this end, in this project, we designed polymeric resin for efficient and cost-effective separation of BMOs from whey permeate. Using the dairy industry's waste stream and converting it to a significantly high-value product such as BMOs have a remarkable potential for the dairy industry to not only promote sustainability by mitigating the environmental impact of the waste stream but also enhancing the circular economy by extending the dairy industry to the functional food market.

Project 8 – 2021 Contract Period PI – Ali Abbaspourrad

Conversion of Milk Proteins to Clean Label Emulsifiers (year 1 of 2)

Budget: \$96,760

End of Year Project Summary: This project aims to convert whey as an abundant by product from the cheese-making industry to high value-added and clean label ingredients such as emulsifiers and whey protein hydrolysates (WPHs). Emulsifiers have a broad range of functionalities that qualify them to be used in several food applications such as dressing, mayonnaise, frosting, etc. However, the emulsifiers' market lacks clean label

and sustainable emulsifiers. WPHs have high nutritional value, low bitterness, and low antigenicity, which make them qualified to be used as an ideal ingredient in the formulation of infant formula to reduce allergic reaction to milk protein and sports nutrition for athletics. To this end, we used our chemistry and engineering experiences to enhance the applications of whey protein. The whey was enzymatically hydrolyzed and modified with carbohydrates (i.e., maltodextrin, dextran, or pectin) to develop sustainable and clean label food ingredients. The outcome of this project is expected to stimulate the circular economy for the dairy industry by branching out further into the food clean-label ingredient market and further promoting sustainability in the dairy industry.

## **Dairy Promotion Advisory Board Members 2021**

Larry Bailey (Board Chair), Fort Ann, New York (DFA Seat)

Kim Nelson, West Winfield, New York (Agri-Mark Seat)

Julie Patterson, Auburn, New York (At-large Seat)

Jason Kehl, Strykersville, New York (Niagara Frontier Cooperative Bargaining Agency Seat)

Sheila Marshman, Oxford, New York (NYS Grange Seat)

Carl Moore, North Bangor (NY Farm Bureau Seat)

Dean Handy, St. Johnsville, New York (At-large Seat)

Alicia Lamb, Oakfield, New York (At-large Seat)

Judi Whittaker, Whitney Point, New York (At-large Seat)

Donald Harwood, Perry, New York (Rochester Cooperative Milk Producers Bargaining Agency Seat)

## Dairy Promotion Advisory Board Member Meetings:

Date	Location
February 11	Video Conference
April 1	Video Conference
June 30	Syracuse, NY
July 16	Video Conference
August 5	Syracuse, NY
September 10	Video Conference
September 21 & 22	Ithaca, NY
November 4	Hudson Falls, NY
December 23	Video Conference

Note: Dairy Promotion order Advisory Board meetings are open to the public. For more information about Advisory Board meetings, recordings or minutes, visit: [www.agriculture.ny.gov](http://www.agriculture.ny.gov) or visit the Advisory Board's YouTube page: <https://www.youtube.com/@nysdpo9667>